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JOHN R LEY, LCC  
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GREENWOOD VILLAGE, CO 80111

EXAMINER

PIAZZA CORCORAN, GLADYS JOSEFINA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 10/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/031,956

Applicant(s)

JONSSON ET AL.

Examiner

Gladys J Piazza Corcoran

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**FINAL ACTION**

***Claim Objections***

1. Claim 40 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 40 recites that the second sheet is planar, however the material worked upon does not further limit the structure or the function of the apparatus claim.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 16-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

a. Claim 16 recites "heating substantially only the abutting contact portions".

While the Specification has support for heating at only the abutting contact portions (Specification page 6, lines 14-30 and figures), there is no support or description of "substantially" only the abutting contact portions. It is suggested to amend to --heating at only the abutting contact portions--.

b. Claim 16 recites "to an adherence temperature sufficient for adhering the heated sheet to the other sheet" and "while the heated sheet is at the adherence temperature". There is no discussion of any particular adherence temperatures in the original Specification. It is unclear what this further adds to the claims. It is suggested to delete "to an adherence temperature for adhering the heated sheet to the other sheet" and to replace "while the heated sheet is at the adherence temperature" with --while said at least one of the first and second sheets is heated--.

c. Claim 18 recites "heating the abutting contact portions along a heated path". There is no support in the Specification for a heated path. It is suggested to amend to --where said heating of said abutting contact portions extends parallel to the direction that the sheets are fed as the sheets are in motion from said simultaneous feeding--.

d. Claim 19 recites "continuously heating the abutting contact portions along the entire predetermined length of the heating path as the sheets are in motion from said simultaneous feeding." There is no support for continuous heating along a predetermined length or a heating path in the Specification. It is suggested to cancel this claim.

e. Claim 20 in its entirety is not supported by the original Specification. There is no support in the original Specification for a pressing path or a heating path, much less extending the pressing path and the heating path to predetermined lengths where the heating path is extended to a predetermined

length greater than the predetermined length of the pressing path. It is suggested to cancel this claim.

f. Claim 21 recites "transferring energy substantially only from each core bar to heat the abutting contact portions." While the Specification discloses heating by transferring energy only from each core bar, there is no support in the original Specification for "substantially only from each core bar". Additionally, while the Specification has support for the heating step being transferring energy from the core bars, there is no support for two separate steps of heating and transferring energy. It is suggested to amend to --providing said heating step by transferring energy only from each core bar to heat said at least one sheet at only the abutting contact portions--.

g. Claim 21 recites "to the adherence temperature". There is no discussion of any particular adherence temperatures in the original Specification. It is unclear what this further adds to the claims. It is suggested to delete "to the adherence temperature".

h. Claim 28 recites "transfers energy substantially only onto the abutting contact portions of the sheets." While the Specification has support for transferring energy at only the abutting contact portions (Specification page 6, lines 14-30 and figures), there is no support or description of "substantially" only the abutting contact portions. It is suggested to amend to --transfers energy at only the abutting contact portions of the sheets--.

- i. Claim 28 recites "to an adherence temperature sufficient for adhering the heated sheet to the other sheet" and "after the one sheet is heated to the adherence temperature." There is no discussion of any particular adherence temperatures in the original Specification. It is unclear what this further adds to the claims. It is suggested to delete "to an adherence temperature sufficient for adhering the heated sheet to the other sheet" and delete "to the adherence temperature" after the recitation of "after the one sheet is heated".
- j. Claim 29 recites "the energy transferred substantially only by core bars". While the Specification discloses heating by transferring energy only from each core bar, there is no support in the original Specification for "substantially only from each core bar". It is suggested to amend to --the energy transferred only from each core bar--.
- k. Claim 29 recites "to the adherence temperature". There is no discussion of any particular adherence temperatures in the original Specification. It is unclear what this further adds to the claims. It is suggested to delete "to the adherence temperature".
- l. Claim 30 recites "the guide member comprises an extension of at least one of the core bars". While the Specification discloses the core bars as guide members for guiding the sheets, there is no discussion of "an extension of" at least one of the core bars being part of the guide member. It is suggested to delete "an extension of".

- m. Claim 31 recites "a heating path". There is no support in the Specification for a heating path. It is suggested to amend the claim to recite, --the local energy transfer element of each core bar extends along each core bar; and the local energy transfer element transfers energy to the abutting contact portions along its length as the sheets are in motion relative to each core bar--.
- n. Claim 33 recites "the local energy transfer element constitutes a thermal transfer characteristic of the core bar; and the core bar is heated to transfer thermal energy to the abutting contact portions". There is no support in the Specification for "a thermal transfer characteristic" and while the local energy transfer elements are heated, there is no support for actually heating the core bars to transfer the energy to the abutting contact portions in addition to transferring energy through the local transfer elements. It is suggested to delete the claim.
- o. Claim 34 recites "each local energy transfer element comprises a contact surface of the core bar." There is no support in the original Specification that the local energy transfer elements are on the contact surface of the core bars.
- p. Claim 37 recites, "an energy source located remotely from the core bars and connected to the core bars to conduct energy to the core bar to supply the energy transferred from the local energy contact element to the abutting contact portions of the sheets." While the Specification has support for the energy transfer elements being electric heating conductors with conventional power supply units providing the power, there is no support for a remotely located

energy source that conducts energy to the core bar. It is suggested to amend the claim to --a power supply providing energy to each local energy transfer element for transferring energy to the abutting contact portions of the sheets--.

q. Claim 38 recites "an energy source located within the core bars". While the Specification discloses a power source connected to the heating members 28 however there appears to be no support for the energy source located within the actual core bars.

r. Claim 39 recites "the first sheet is substantially planar". While the Specification has support for a planar first sheet, there is no support or description of a "substantially" planar first sheet. It is suggested to amend to --the first sheet is planar--.

4. Claim 37 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a power supply unit, does not reasonably provide enablement for an energy source located remotely from the core bars. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. See the suggestion above for amending the claim.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 16-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.



7. Claim 16 is unclear by reciting "heating substantially only the abutting contact portions". Because the Specification does not describe heating "substantially" only the abutting contact portions, it is unclear what the scope of "substantially" includes or excludes or how this further adds to the claim. It is suggested to amend to --heating at only the abutting contact portions--.
8. Claim 20 is unclear in its entirety. As discussed above, there is no support in the original Specification for the pressing path or the heating path or the extending of the paths to predetermined lengths. Since there is no description in the Specification for such limitations, it is unclear what the limitations mean and what their scope entails.
9. Claim 21 is unclear by reciting "transferring energy substantially only from each core bar." Because the Specification does not describe transferring energy "substantially" only from each core bar, it is unclear what the scope of "substantially" includes or excludes or how this further adds to the claim. Additionally, it is unclear whether the transferring energy step is in addition to or is the heating step (as described in the Specification). It is suggested to amend to --providing said heating step by transferring energy only from each core bar to heat said at least one sheet at only the abutting contact portions--.
10. Claim 28 is unclear by reciting "transfers energy substantially only onto the abutting contact portions of the sheets." Because the Specification does not describe transferring energy "substantially" only onto the abutting contact portions it is unclear what the scope of "substantially" includes or excludes or how this further adds to the

claim. It is suggested to amend to --transfers energy at only the abutting contact portions of the sheets--.

11. Claim 29 is unclear by reciting "the energy is transferred substantially only by core bars." Because the Specification does not describe transferring energy "substantially" only from each core bar, it is unclear what the scope of "substantially" includes or excludes or how this further adds to the claim. It is suggested to amend to --the energy transferred only from each core bar--.

12. Claim 33 is unclear by reciting "the local energy transfer element constitutes a thermal transfer characteristic of the core bar; and the core bar is heated to transfer thermal energy to the abutting contact portions". There is no support in the Specification for a thermal transfer characteristic, therefore it is unclear what this characteristic is. Additionally, independent claim 28 recites that the local energy transfer elements transfer energy to the abutting contact portions therefore it is unclear when claim 33 recites that the core bar is heated to transfer thermal energy to the abutting contact portions. There is no support in the specification for heating both the transfer elements and the core bars separately, therefore this claim is unclear. It is suggested to delete the claim.

13. Claim 39 is unclear by reciting "the first sheet is substantially planar". Because the Specification does not describe the first sheet being "substantially" planar, it is unclear what the scope of "substantially" includes or excludes or how this further adds to the claim. It is suggested to amend to --the first sheet is planar--.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 16-20, 25, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susuki et al. (US Patent No. 3,666,590) in view of Swartz (US Patent No. 4,267,223).

Susuki discloses a method of manufacturing multi-sheet corrugated material from first (s) and second (s1 or s2) sheets which are adhered together, the first sheet (s) having a wave shape defined by parallel extending peaks and valleys by feeding the first and second sheets simultaneously (column 3, lines 44-72), bringing the peaks of the first sheet into abutting contact with the second sheet as they are fed simultaneously (column 3, lines 45-50), heating the abutting contact portions of at least one of the first

and second sheets to an adherence temperature sufficient for adhering the heated sheet to the other sheet (column 3, lines 55-60), pressing the first and second sheets together at the abutting contact portions while the heated sheet is at the adherence temperature to thereby adhere the two sheets together at the abutting contact portions (column 3, lines 49-56) and performing said heating and pressing of the abutting contact portions as the sheets are in motion from said simultaneous feeding (column 3, lines 44-72).

Susuki discloses that the heating step is performed by the heating means 6 which heats the belts to weld the sheets together. However, it is well known in the art to provide heating means in a continuous process that heats substantially only the abutting contact portions in order to reduce the energy used in the heating process, and to avoid heating the entirety of the sheets to avoid deformation. For example, Swartz discloses heating sheets to bond a corrugated sheet to another sheet by providing heating means that allow continuous movement of the sheets while heating only the abutting contact portions of the sheets (column 1, lines 48-65). It is noted that while the corrugations in Swartz are transverse to the direction of motion, it would have been well within the purview of one of ordinary skill in the art at the time of the invention to provide the contacting portions of the heating means in a direction parallel to the direction of motion in order to provide heat to sheets with corrugations parallel to the direction of motion as shown in Susuki. Only the expected results would be attained. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming corrugated material as shown by Susuki with heating means that

provides heat substantially only to the abutting contact portions of the sheets as is considered well known in the art in order to reduce the amount of energy used and to reduce distortion in the other areas of the sheets as exemplified by Swartz.

As to claim 17, the first sheet in Susuki is fed in a direction parallel to the peaks and valleys. As to claim 18, the abutting contact portions are considered to be heated along a path extending parallel to the direction that the sheets are fed as the sheets are in motion from said simultaneous feeding. As to claim 19, the heating in Susuki and Swartz is continuous along the entire area of heating as the sheets are in motion from the simultaneous feeding. As to claim 20, as discussed above, this claim is unclear. Both Susuki and Swartz show the heating and pressing steps are in alignment (in the direction of the movement of the sheets) as the sheets are in motion. As to the extension of the paths, this is unclear. As to claim 25, the wave shape in the first sheet is formed while the first sheet is being fed and prior to bringing the peaks of the first sheet into contact with the second sheet at the abutting contact portions (column 2, line 65 to column 3, line 5). As to claim 26, the second sheet is planar (s1 or s2).

17. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Susuki et al. (US Patent No. 3,666,590) in view of Swartz (US Patent No. 4,267,223) as applied to claim 16 above, and further in view of Scogland (US Patent No. 2,454,719).

It is known in the art to form multiple layered corrugation materials with multiple sheets having a wave shape. For example, Scogland shows it is known in the art to form laminated plastic sheet board of multiple layers with multiple waved sheets by providing three rows of core bars in order to abut the contact portions of the waves in

the sheets. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming corrugated material as shown in Susuki by providing a second sheet with waves in order to form a corrugated material with multiple sheets with abutting waves as is well known in the art and further exemplified by Scogland, only the expected results would be attained.

***Allowable Subject Matter***

18. Claims 21-24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

19. Claims 28-41 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

20. The following is a statement of reasons for the indication of allowable subject matter:

As to the method claims (21-24), Susuki shows it is known to form corrugated material in a continuous manner with corrugations parallel to the direction of travel as discussed above. Swartz shows it is known to only heat at the abutting contact portions in the continuous formation of corrugated material. Casella, as discussed in the previous Office Action, discloses forming a stack of corrugated material with heating rods. Fell, as discussed in the previous Office Action, discloses forming a stack of corrugated material with heated rod mandrels. Huebner (US Patent No. 4,957,577) is another example where a stack of corrugated material with ultrasonic welding heads. However, as argued in the remarks on July 28, 2004 and in light of the amendments of

the claims on July 28, 2004, the references Casella, Fell and Huebner show heated rods or welding heads only in a method of forming stacks of corrugated material and not a continuous process of simultaneously feeding two sheets with one of the sheets having corrugations parallel to the direction of movement of the sheets. Consequently, absent any pertinent additional prior art, no prior art was found to show or suggest a method of forming a multi-sheet corrugated material by feeding a first sheet onto a plurality of elongated core bars that fit within the valleys of a first sheet with corrugations parallel to the direction of feeding where the heating of only the abutting contact portions is provided by transferring energy only from each core bar in the claimed environment.

As to the apparatus claims (28-41), Susuki shows a device for manufacturing a multi-sheet corrugated material with a feed mechanism, a guide member, a plurality of elongated core bars and a press device as discussed in the previous Office Action. Casella, as discussed in the previous Office Action, discloses forming a stack of corrugated material with heating rods. Fell, as discussed in the previous Office Action, discloses forming a stack of corrugated material with heated rod mandrels. Huebner (US Patent No. 4,957,577) is another example where a stack of corrugated material with ultrasonic welding heads. However, as argued in the remarks on July 28, 2004 and in light of the amendments of the claims on July 28, 2004, the references Casella, Fell and Huebner show heated rods or welding heads only in an apparatus for forming stacks of corrugated material and not a continuous apparatus with a feeding mechanism capable of simultaneously feeding two sheets in a longitudinal direction with the

elongated cores parallel to the longitudinal direction. Consequently, absent any pertinent additional prior art, no prior art was found to show or suggest an apparatus with stationary elongated cores parallel to the longitudinal direction of feeding with each core bar including a local energy transfer element transferring energy only onto the abutting contact portions of the sheets while the sheets are moving in the claimed environment.

### ***Response to Arguments***

21. Applicant's arguments with respect to claims 16-20, 25-27 have been considered but are moot in view of the new ground(s) of rejection in light of Applicant's amendments to the claims.

### ***Conclusion***

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of




Art Unit: 1733

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (571) 272-1214. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gladys JF Corcoran  
Primary Examiner  
Art Unit 1733

GJPC